REMARKS

Applicants request favorable reconsideration and allowance of the subject application in view of the following remarks.

Claims 13-17 are pending in the application, with claim 13 being the only independent claim.

Claims 13-16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,114,020 (Misuda et al.) in view of U.S. Patent No. 6,183,851 (Mishima), U.S. Patent No. 6,492,005 (Ohbayashi et al.) and U.S. Patent No. 5,175,133 (Smith et al.). Claims 13-17 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Misuda et al. in view Mishima, Ohbayashi et al., Smith et al., and U.S. Patent No. 6,472,053 (Hoshino et al.). These rejections are respectfully traversed.

As recited in independent claim 13 of the present application, the average particle diameter of aluminum oxide particles of the γ-crystal structure is at least 0.21 μm and at most 1.0 μm, and at least 90% of all particles of the aluminum oxide particles of the γ-crystal structure have a particle diameter of at most 1.0 μm.

When the average particle diameter is less than 0.21 μm, ink absorbency can deteriorate, and in some images, ink overflow can occur, affecting the clearness or evenness of the images. A recording medium with such ink absorbency problems is not ideal for use in full-color recording.

As acknowledged in the Office Action, the Misuda et al. patent does not teach the use of alumina having γ-crystal structure. Further, the Misuda et al. patent does not teach or suggest an average particle diameter of aluminum oxide particles of at least 0.21 μm and at most 1.0 μm. However, the Examiner appears to have taken the position that Mishima

remedies these deficiencies of the Misuda et al. patent. Applicants respectfully disagree with that position.

Mishima merely discloses that a coating layer can include, for the purpose of dye absorption, a sub-layer of a polymer made up of a particular component monomer and another sub-layer of inorganic pigments. In particular, the Mishima patent discloses that the inorganic pigment is "not specifically limited and may be any suitable inorganic pigment," and then lists many classes of inorganic pigments as examples, of which silica pigments and alumina pigments are preferred (col. 8, lines 24-35). Mishima makes a distinction between "anhydrous alumina," of which there are ten specific examples (including "γ-alumina"), and "alumina hydrate," of which alumina monohydrate and trihydrate are preferred. Given examples of the alumina monohydrate include pseudoboehmite, boehmite, and diaspore, and given examples of the alumina trihydrate include gibbsite and bayerite. The Mishima patent states, "Preferred among these alumina pigments is alumina hydrate." (col. 8, lines 50-60, emphases added.)

That is, while Mishima may mention "γ-alumina" as an example of an alumina pigment, the patent does so in a context of many other classes of inorganic pigments. Silica pigments are also pointed out as being preferred inorganic pigments. When the patent does discuss alumina pigments, it is alumina hydrate that is noted as being preferred, and not anhydrous alumina, of which group γ-alumina is listed as a member, merely in alphabetical order, along with nine other examples of anhydrous alumina.

As noted in the Office Action, the Misuda et al. patent discloses the use of alumina hydrate. In fact, the Misuda et al. patent asserts that alumina hydrate is "particularly preferred" (col. 4, line 34). Applicants submit that it has not at all been properly

established why one of ordinary skill in the art would, upon reading the disclosure of the Misuda et al. patent regarding the particularly preferred use of alumina hydrate, be motivated to replace that alumina hydrate with anhydrous alumina (and specifically γ-alumina), when Mishima reinforces the preferability of alumina hydrate.

As to particle size, Mishima states that the average particle diameter of the alumina pigment is "preferably from 4 to 300 mμ, preferably from 4 to 200 mμ" (col. 8, lines 60-62, emphasis added). That is, while the first of these given numerical ranges may overlap with the range recited in independent claim 13 of the present application, the second range (which Applicants assume is intended to be even "more preferable") falls outside the range of at least 0.21 μm and at most 1.0 μm. Applicants point this out in support of the argument that, like Misuda et al., Mishima does not recognize the importance of keeping average particle size in the claimed range, as taught by the present application. In this regard, Applicants note that Mishima does not contain any comparison with respect to an inorganic pigment having an average particle size outside the range disclosed in that patent. Thus, Mishima cannot properly be taken to teach or suggest any special and particular importance to be attributed to the particle size of alumina pigments, much less to the particle size of anhydrous alumina, and still less to the particle size of γ-alumina. Applicants submit that it has not been properly established why one of ordinary skill in the art, after reading one patent that does not focus particularly on the particle size at issue, would read a second patent that also does not focus particularly on particle size, and then somehow arrive at a recognition as to why an average particle diameter of aluminum oxide particles should be at least 0.21 μm and at most 1.0 μm.

Moreover, Mishima is also silent as to having at least 90% of all particles of aluminum oxide particles of the γ-crystal structure have a particle diameter of at most 1.0 μm, as required by claim 13 of the subject application, and there is nothing in the patent that would suggest the importance of such a feature.

A purpose of the present invention is to produce a recording medium that satisfies both surface gloss and absorbency with a process of producing a recording medium for which gamma alumina particles are used in the outermost surface. Since gamma alumina shows a high hardness, when it is used in an outermost surface, the surface is hardly scratched but only low gloss images can be obtained. As taught by the present application, such a problem can be solved with an ink-receiving layer produced using gamma alumina particles obtained by grinding gamma alumina particles and removing a coarse particle component by a separation treatment such that the average particle diameter is at least 0.21 μm and at most 1.0 μm, and at least 90 % of all the gamma aluminum particles have a particle diameter of at most 1.0 μm. As a result, a recording medium that has desirable surface gloss and absorbency can successfully be obtained. Misuda et al. teaches none of these features, and even if Mishima could be combined with Misuda et al. in the manner suggested in the Office Action, the noted deficiencies with respect to the present claimed invention would still remain.

Furthermore, none of Ohbayashi et al., Smith et al., and Hoshino et al. remedies the deficiencies already identified.

In view of the above, Applicants submit that the § 103 rejections of independent claim 13 cannot properly be maintained. Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

The dependent claims are also submitted to be patentable, due to dependency from claim 13, as well as due to additionally recited features.

Applicants believe that this paper is fully responsive to the outstanding Final Office Action, and that the subject application is in condition for allowance. Favorable consideration and an early Notice of Allowance are respectfully requested.

Applicants' undersigned attorney may be reached in Washington, D.C. by telephone at (202) 530-1010. All correspondence should continue to be directed to the address given below.

Respectfully submitted,

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